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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HUYNH, NAM TRUNG

ART UNIT

PAPER NUMBER

2617

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/763,817	Applicant(s) TANAKA, MIKIHIRO	
	Examiner NAM HUYNH	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/23/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-18 in the reply filed on 1/6/2008 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 5,428,819) (hereinafter Wang) in view of Carneal et al. (US 6,982,969).

Regarding claim 1, Wang teaches a wireless communication system for performing communication within a frequency region divided into a plurality of frequency bands, comprising:

searching means for searching idle frequency bands which are not used by other wireless communication systems (column 7, lines 9-22);

band allocating means for allocating a frequency band having a predetermined bandwidth to be used by the wireless communication system from among the idle frequency bands detected by said searching means (column 7, lines 22-28); and

Wang teaches that when the band allocating means cannot allocate the frequency band a further determination/search is made in different frequency bands to locate a free channel. However, Wang does not explicitly teach band adjusting means for adjusting the bandwidth to be occupied by the wireless communication system or any of the other wireless communication systems when said band allocating means cannot allocate the frequency band, and causing said band allocating means to perform reallocation of the frequency band. Carneal teaches allocating one or more portions of a frequency spectrum among a plurality of radio frequency (RF) transmitters and/or receivers (abstract). In the scope of the invention, a hub station determines whether or not it is necessary to re-allocate a portion of the frequency spectrum (adjusting the bandwidth) from one group (wireless communication system) to another based on congestion within the groups (column 9, lines 24-67). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Wang, to include adjusting the bandwidth when a frequency band cannot be allocated, as taught Carneal, in order to re-distribute the assigned frequency spectrum from among wireless communications systems. This modification reduces the likelihood of congestion within a single system and optimizes frequency utilization.

Regarding claim 2, Wang teaches said searching means searches reference frequencies of the frequency bands used by the other wireless communication systems and specifies reference frequencies each remaining in an idle state within said frequency region; and

said band allocating means allocates the frequency band to be used by the wireless communication system within an idle frequency band composed of a group of the idle state reference frequencies adjacent to each other (column 8, lines 7-17, the foreign sub band is adjacent to the home sub-band since the systems overlap)

Regarding claim 3, Wang teaches said searching means determines main frequencies of the frequency bands being used by the other wireless communication systems, inquires about frequency band information on the bands being used by the other wireless communication systems according to each of radio signals at said main frequencies, and specifies reference frequency bands in an idle state based on the frequency band information obtained from the other wireless communication systems (column 8, lines 7-38).

Regarding claim 4, Carneal teaches said band adjusting means reduces said predetermined bandwidth and performs the allocation of the frequency band to be used by the wireless communication system (column 9, lines 39-53).

Regarding claim 6, Carneal teaches said band adjusting means enlarges an idle frequency bandwidth by shifting main frequencies of the frequency bands being used by the other wireless communication systems searched by said searching means and

causes said band allocating means to perform reallocation of the frequency band to be used by the wireless communication system (column 9, lines 23-67).

Regarding claim 7, Carneal teaches said band adjusting means determines the main frequency of the frequency bands being used by one of the other wireless communication systems and enlarges the idle frequency bandwidth by requesting said one of the other wireless communication systems by using a radio signal having the main frequency to shift the main frequency of the frequency band being in use (column 9, lines 23-67).

Regarding claim 8, Carneal teaches said band adjusting means determines a main frequency of the frequency band being used by one of the other wireless communication systems, and enlarges the idle frequency bandwidth by requesting said one of the other wireless communication systems by using a radio signal having the main frequency to reduce the bandwidth being in use (column 9, lines 23-67).

Regarding claim 9, Carneal teaches a wireless communication system for performing communication within a frequency region divided into a plurality of frequency bands, comprising:

a server radio station (figure 1, item 108A, 108B) connected to a wired LAN (figure 1, item 116) for performing wireless communication with a plurality of client terminals (figure 1, item 118A, 118B) and mediating communication between the individual client terminals or between each of the client terminals and the wired LAN, said server radio station having a memory for storing frequency band information

indication radio frequency bands being used by the wireless communication system and other wireless communication systems (figures 6 and 7); and

a server management terminal for controlling allocation of the frequency band to be used by the wireless communication system based on said frequency band information (column 9, lines 23-67).

Regarding claim 10, Wang teaches said frequency band information memory includes idle band information indicative of the frequency bands which are not used by the other adjacent wireless communication systems (column 7, lines 9-22), and

said server management terminal performs the allocation of the frequency band to be used by the wireless communication system by referring to said idle band information (column 7, lines 22-28).

Regarding claim 11, Wang teaches said frequency band information memory indicates main frequencies of the frequency bands (IFC) (column 7, lines 9-22) and occupied bandwidths being used by the plurality of the other wireless communication systems, and

said server management terminal performs the allocation of the band to be used by the wireless communication system by referring to said frequency band information (column 7, lines 22-28).

Regarding claim 12, Carneal teaches said server management terminal has means for designating a communication speed for the wireless communication system and sets the occupied bandwidth of the frequency band to be used by the wireless

communication system in accordance with said designated value (column 10, lines 12-32).

Regarding claim 13, Carneal teaches said server management terminal has means for requesting a server management terminal of any of the adjacent wireless communication systems to change a frequency band being in use when the frequency band cannot be allocated to the wireless communication system, and performs the allocation of the frequency to be used by the wireless communication system based on the frequency band information that has been changed (column 9, lines 23-67).

Regarding claim 14, Wang teaches said server management terminal has means for searching a frequency band being used by any of the other adjacent wireless communication systems and allocating the searched frequency band to said server radio station so that the server management terminal performs communication with a server management terminal of the other adjacent wireless communication system (column 8, lines 7-17).

Regarding claim 15, Carneal teaches said server management terminal has means for correcting the width of the frequency band to be used by the wireless communication system when the frequency band cannot be allocated to the wireless communication system, thereby to perform reallocation of the frequency band to the wireless communication system with the corrected bandwidth (column 9, lines 23-67).

Regarding claim 16, Carneal teaches said server management terminal performs has control means for shifting a main frequency of the frequency band being used by the wireless communication system or reducing an occupied bandwidth and updating

the frequency band information on the wireless communication system in said frequency band information memory when it is requested to change the frequency band from a server management terminal of any of the other adjacent wireless communication systems (column 9, lines 23-67).

Regarding claim 17, Carneal teaches said control means notifies a client terminal connected to said server radio station of the change in the frequency band when the frequency band information on the wireless communication system is updated (figure 7).

Regarding claim 18, Carneal teaches said server management terminal performs the allocation of the band such that the frequency bands used by the wireless communication system and a plurality of the other wireless communication systems are not adjacent to each other (there is no mention in Carneal of adjacent frequency bands).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAM HUYNH whose telephone number is (571)272-5970. The examiner can normally be reached on 8 a.m.-5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NTH

3/14/08

/George Eng/

Supervisory Patent Examiner, Art Unit 2617